

Obtaining of bitumen emulsions using nonionic surface-active substances

Glady E., Kemalov R., Kemalov A., Kornetova O.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

Background: One of the trends concerning an effective use of large-tonnage and yet scarce binder as bitumen is a considerable introduction of bitumen emulsions in water into the practice of road and civil construction. Methods: The paper presents the experimental data on the research of bituminous emulsions, the physical-chemical properties of an original BND bitumen 60/90 from Zyuzeevsky NBZ and the bitumen residue there of. Results: The resulting emulsions were highly stable and were referred to slowly structured (slowly decomposing) ones, which may be used in the preparation of cold bituminous mineral mixtures of different density used for storage, the strengthening of soils, dust removal from roads. These emulsions had a viscous consistency that may be used for solving the problem of bitumen emulsions application to an inclined surface. Bituminous residues differ by the improvement of a film binder adhesion performance with mineral material (adhesion) without the use of additional adhesion additives. Conclusion: The use of such a component, which also has an emulsifying ability and an adhesion effect, an increased resistance to delamination and coalescence of an emulsion during storage, bitumen saving and the environmental rate.

<http://dx.doi.org/10.17485/ijst/2016/v9i18/93770>

Keywords

Bitumen residue, Bituminous emulsions, Emulsifier, Properties, Surfactant